Exhibit 11
Filed Under Seal

Sonos UPnP Overview

A Brief Overview of UPnP

Sonos devices follow the UPnP rules for device discovery, device description, actions (commands) and events. Each is briefly described below. The full description of each mechanism can be found in the UPnP Device Architecture v1.0 document.

Device discovery - control points (a.k.a. control applications) need to listen for UDP multi-casts on port 1900 and listen for UPnP advertisements for "ZonePlayer:1" devices. The control point must maintain a cached list of all the active Sonos devices.

Each device supports a set of UPnP services, which are listed in the device description XML file for the device. The most imporant services related to music playback are the following MediaRenderer services:

- AVTranport service - controls the music source that is playing on a player or group of players, and controls the playback state (e.g. play/pause/stop, skip next, skip previous)
  Base UPnP spec: AVTransport:1
- Queue service - manages the private and shared queues (dynamic playlists) on a Sonos player
  Base UPnP spec: none; this is a Sonos-specific service
- RenderingControl service - controls the volume, mute, EQ and related audio parameters that are specific to a single device
  Base UPnP spec: RenderingControl:1
- GroupRenderingControl service - controls the volume and mute parameters for a set of grouped Sonos players.
  Base UPnP spec: none; this is a Sonos-specific service

SONOS Specific
Some Sonos devices (such as the DOCK and BRIDGE) cannot play audio and thus do not have a RenderingControl service, even though they respond to an M-SEARCH request with search type (ST) "ZonePlayer:1". Control points must check that a Sonos device supports a given UPnP service before attempting to use that particular service on that device.

Each UPnP service has a set of "actions" - commands that can be executed. An action can have input and/or output parameters.

Each UPnP service has a set of "state variables" which track the state of that service. Most state variables are evented, meaning there is a way for a control point to receive an asynchronous notification when the value of one or more state variables for a service changes. Many services also have some "getter" actions which return the value for certain state variables; however, using the asynchronous event notification results in a more responsive user interface and reqires less network traffic. For instance, an app that displays a volume slider that shows the volume for a group of Sonos players should always subscribe to the GroupRenderingControl service so that it is immediately notified if the end user changes the volume using the volume buttons on the Sonos player or the volume control in a Sonos controller app. An app that displays information about the currently playing track and which has a Play/Pause button should subscribe to the AVTransport service so that it is immediately notified if the end user skips to the next track or pauses playback using buttons on the Sonos player or using a Sonos controller app.

To receive events from a UPnP service, a control point subscribes to that service and provides a call-back URI. When a control point no longer requires events for a given UPnP service, it should unsubscribe to release resources on the Sonos device. The format of the event is defined by the UPnP standards; each UPnP event contains the state variable values that have changed since the last event was sent for that service.

SONOS Specific
Sonos devices attempt to be very robust when delivering UPnP events to control points, using a retry mechanism that has been shown to be very robust even in extremely challenging wireless environments.

Each UPnP service on a Sonos devices support a maximum of 32 simultaneous subscriptions.